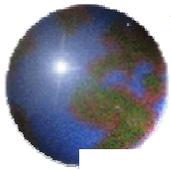


SAHSU and the EUROHEIS project – an overview

Environmental Public Health Tracking Conference in
Philadelphia 24-26 March 2004

Lars Jarup

Imperial College London



SAHSU

POISONED TOWN

DAILY EXPRESS 17 MAY 1996

One school, one class

..... three cancer cases

THE INDEPENDANT 17 MAY 1996

Leukaemia cluster

at school in town

hit by pollution

THE GUARDIAN 17 May 1996.

Parents' fears
in poison town

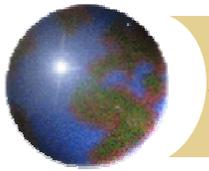
DAILY EXPRESS 17 May 1996

Cancer children
in poison town
DAILY TELEGRAPH 17 May 1996

THE TIMES FRIDAY MAY 17 1996

Three children in
same classroom in
contract leukaemia

Poison town in fear

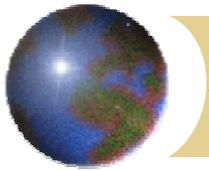


The Black Enquiry

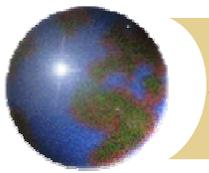
Recommendation 5

“... encouragement should be given to an organisation ... to co-ordinate centrally the monitoring of small area statistics around major installations producing discharges that might present a carcinogenic or mutagenic hazard to the public. In this way, early warning of any untoward health effect could be obtained.”

London, HMSO, 1984

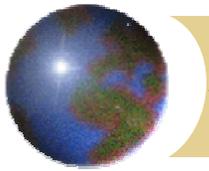


- ✦ The Small Area Health Statistics Unit (SAHSU)
- ✦ Commenced 1987
- ✦ London School of Hygiene and Tropical Medicine
- ✦ Imperial College London since 1996



Scope of work

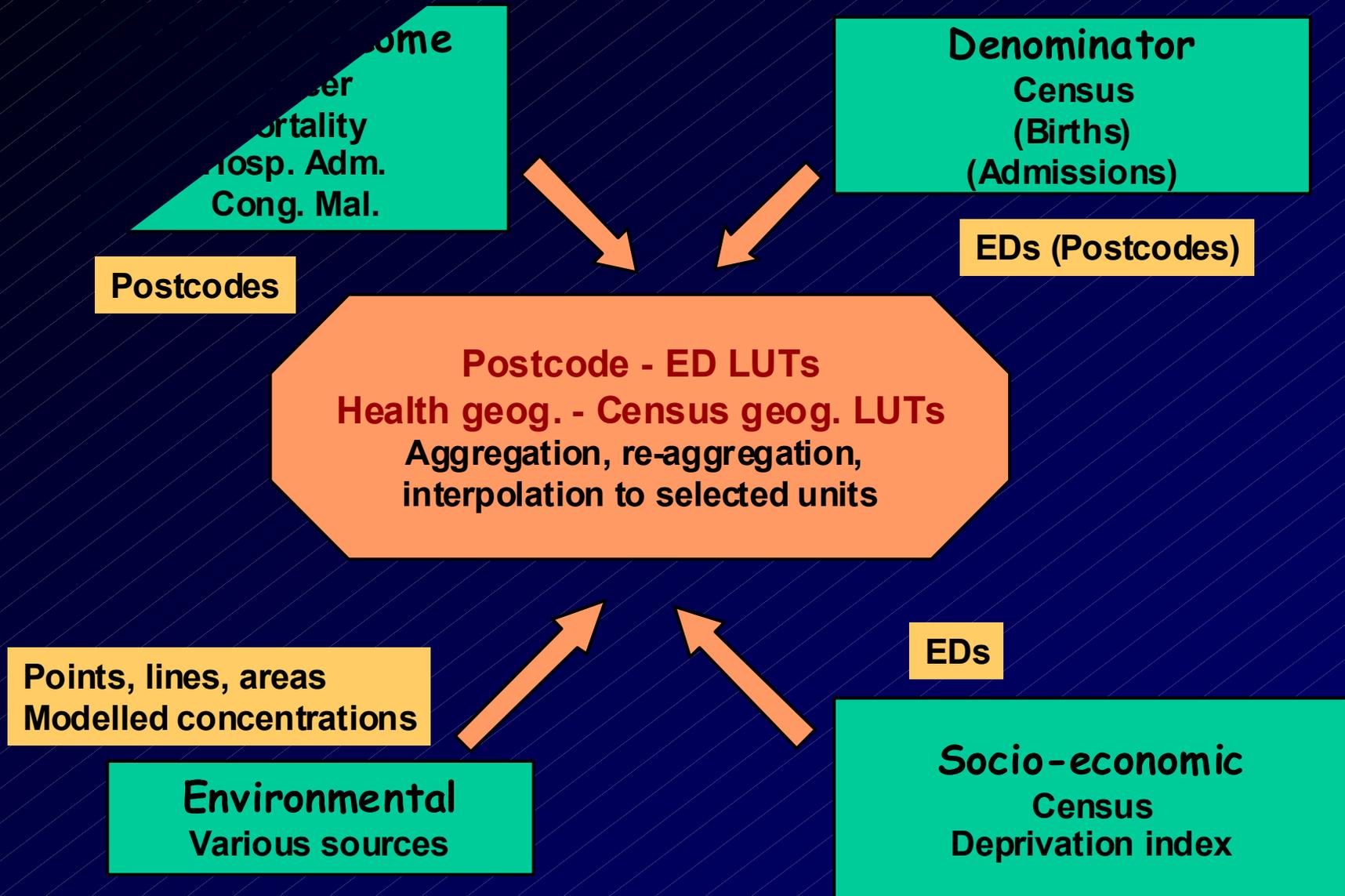
- ✦ To develop and maintain a comprehensive database of postcoded health data
- ✦ To develop and maintain relevant databases of environmental exposures and social confounding factors at the small-area level
- ✦ To carry out substantive research studies on environment and health, including studies of socio-economic factors and health

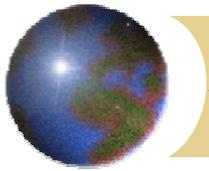


Scope of work

- ✚ To respond rapidly to ad hoc queries about unusual clusters of disease, particularly in the neighbourhood of industrial installations
- ✚ To develop and maintain a Rapid Inquiry Facility
- ✚ To develop small-area statistical methodology

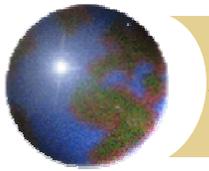
in the SAHSU database





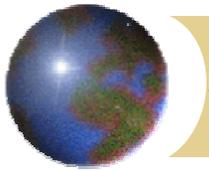
Some examples of recent and ongoing research

- ✚ Landfill (hazardous waste) sites
 - ✚ Birth outcomes
 - ✚ Cancers
- ✚ Water chlorination by-products
 - ✚ Birth outcomes
- ✚ Spatial epidemiology of prostate and testicular cancer
- ✚ Chemical industry (chloralkali)
 - ✚ Kidney disease



Some issues of interpretation

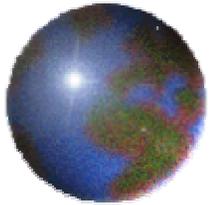
- ✦ Data problems
- ✦ Latency periods/migration
- ✦ Ecological bias
- ✦ Confounding
- ✦ Exposure model - validation



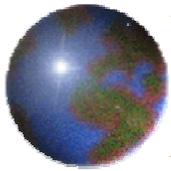
Methods in small-area statistics

- ✦ GIS methods – use and misuse
 - ▣ Linda Beale
- ✦ Statistical Methodology for disease mapping: rate smoothing and issues of sensitivity and specificity
 - ▣ Sylvia Richardson
- ✦ Statistical modelling of environment-health relationships: handling ecological bias
 - ▣ Nicky Best

SAHSU website



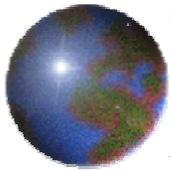
www.sahsu.org



EUROHEIS

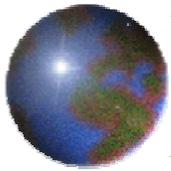
✚ Main objectives

- ✚ to assess the feasibility of implementing systems for point source investigations and disease and exposure mapping, within the participating countries, modeled on the Rapid Inquiry Facility (RIF) system being developed within SAHSU, UK (2000)
- ✚ To implement the RIF where feasible (2001/2002)
- ✚ To evaluate the usefulness of the implemented RIF systems in several case studies (2002/2003)



EUROHEIS

- ✦ Successful implementation is greatly dependent on good quality data being available for use
- ✦ Size of the geographical base units and sparseness of data may pose problems
 - ▣ Statistical methods may at least partially overcome problems related to data resolution and sparseness
 - ▣ In general, a Bayesian hierarchical modeling approach is recommended



EUROHEIS

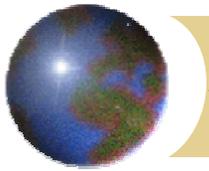
🌐 Implementations of UK RIF

🌐 Spain

🌐 Sweden

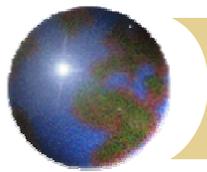
🌐 Finland

🌐 The Netherlands



EUROHEIS

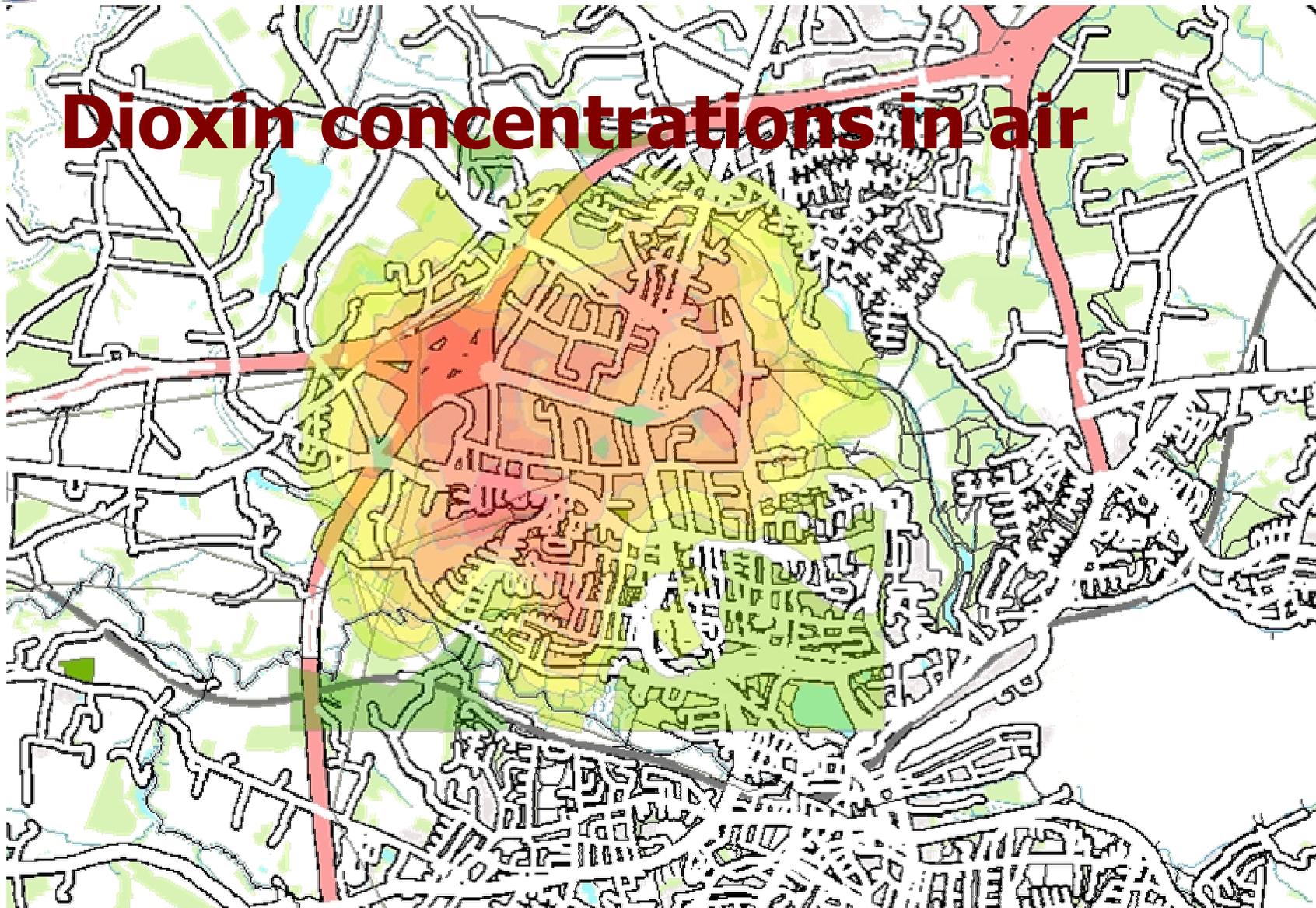
- ➊ Modified implementation of the RIF in Denmark
- ➋ Measures of socio-economic status (deprivation)
 - ▣ Ireland
- ➌ Health Impact Assessment
 - ▣ Italy (WHO Rome)

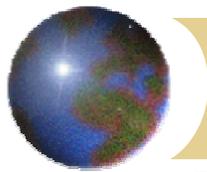


EUROHEIS

Denmark

Dioxin concentrations in air

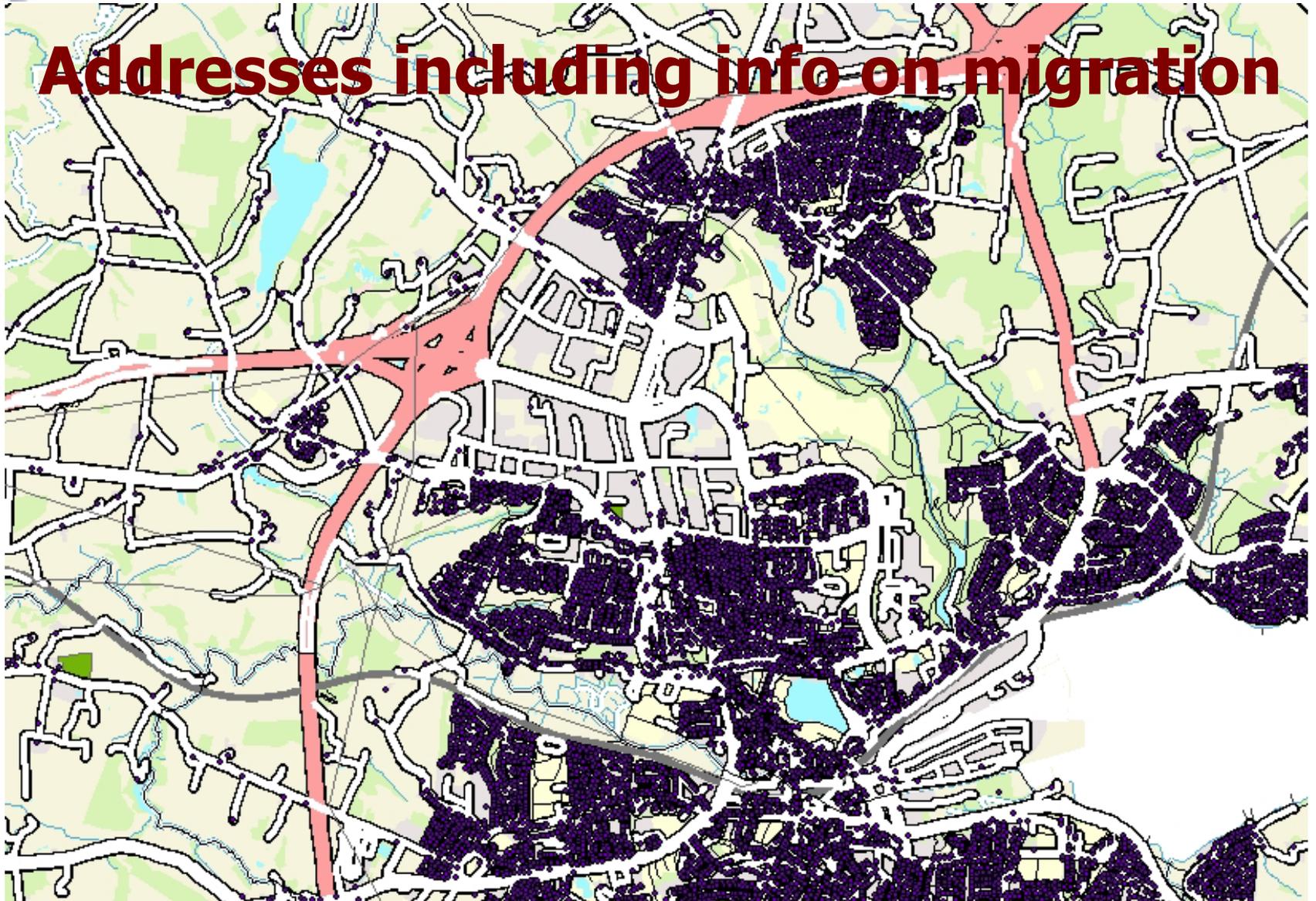


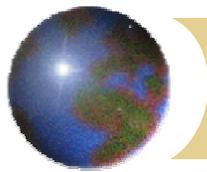


EUROHEIS

Denmark

Addresses including info on migration

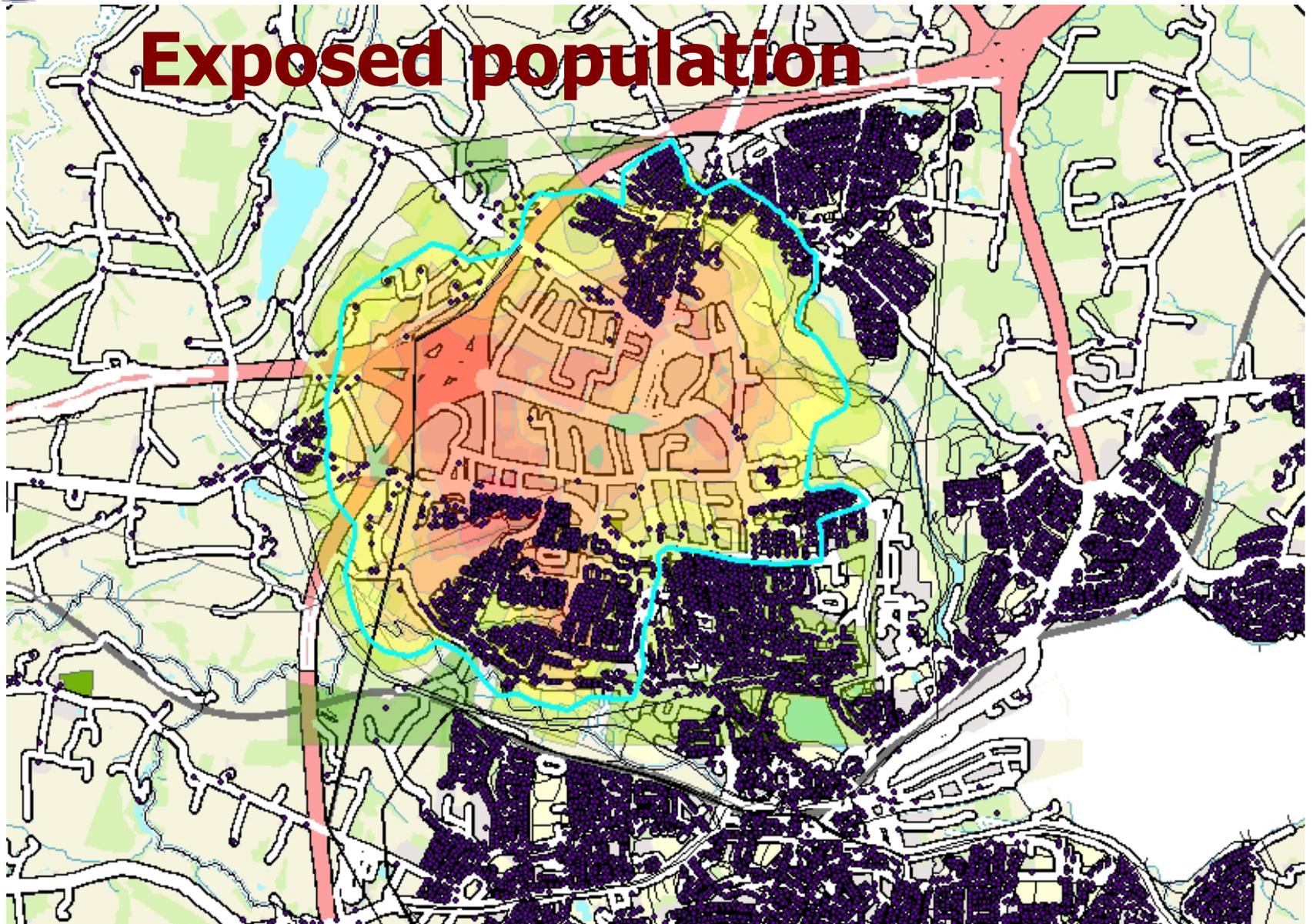


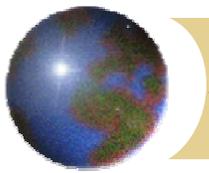


EUROHEIS

Denmark

Exposed population





EUROHEIS

- Final report
- August 2003
- www.euroheis.org

